

REMARKS

Applicant amends claims 1 and 13 to advance prosecution and to clarify that the titanium element is constructed from pure titanium (commercially pure) or titanium alloys having at least about 50% by weight titanium. Support for this amendment can be found on page 13, lines 27-30 of the specification. Accordingly, no new matter has been added.

Claim Rejections

35 U.S.C. §102

The Examiner rejects claims 1, 7, 12, and 13 under 35 U.S.C. §102(b) as being anticipated by WO 96/37281 to Disanayaka et al. The Examiner alleges that Disanayaka et al. discloses an apparatus for purifying air by means of an activated photocatalyst such as titanium dioxide. In particular, the housing has a filter (7) which has a photocatalyst fixed to a fibrous porous support.

The present invention, unlike Disanayaka et al., has a titanium element constructed from titanium or titanium alloys. The titanium element will naturally oxidize and present a surface layer of mixed titanium oxides and related compounds. It is this oxide-rich surface that provides, to a large degree, the photocatalytic effect. Unlike the inherently limited-life titanium dioxide *coatings* suggested by Disanayaka et al., the titanium catalysts of the present invention provide a self-renewing surface catalyst. Moreover, titanium dioxide *coatings* are typically applied like pigment in a dissolved or emulsified form which can leave residues that interfere with catalytic activity.

Commercially pure titanium is an excellent oxygen getter under most environmental conditions. As a result, titanium and titanium-rich alloys naturally maintain an oxide-containing film upon its metallic surface. This oxide-containing surface layer will tend to reform as it is used up and fresh metallic surfaces will be exposed to the air as the chemical reactions with the air and impurities therein proceed. Thus, the surfaces of the air purifier build from titanium require less frequent cleaning and/or replacement.

Disanayaka et al. fail to disclose such a concept and instead rely on coatings of titanium dioxide. Accordingly, this reference fails to disclose the claimed limitations.

Claims 1, 5-8, and 13 are rejected under 35 U.S.C. 102(e) as being anticipated by U.S. Patent No. 5,835,840 to Goswami. In particular, Goswami is cited because it discloses an air purification system including a housing having an irradiation chamber with a bank of lamps and a duct liner coated with titanium dioxide. In addition, a photocatalyst can coat a mesh or matrix of surfaces.

Goswami similarly fails to disclose a titanium element constructed from titanium or a titanium-rich alloy. Accordingly, Applicant respectfully requests the Examiner withdraw the rejection in view of Goswami.

35 U.S.C. §103

Claims 2 and 3 are rejected under 35 U.S.C. 103(a) as being unpatentable over Disanayaka et al. in view of U.S. Patent No. 6,391,272 to Schroeder and U.S. Patent 4,210,429 to Goldstein.

Disanayaka et al. fail to disclose a power controller capable of communication with an AC power source or a pollution detector and a system activator for selectively powering the radiation source in response to a pollutant indicator signal received from the detector. Schroeder and Goldstein are cited to remedy the deficiencies of Disanayaka et al. In particular Schroeder is cited to teach a pollution sensor and Goldstein is cited to disclose communication with an AC power source.

Neither Schroeder nor Goldstein teach or disclose a titanium element as required the independent claim 1. Therefore, even if the Disanayaka et al. reference were combined with Schroeder and Goldstein, the combination would fail to disclose the required limitation of independent claims 1 and 13.

Double Patenting

Claims 1-11 are rejected under the judicially created doctrine of obviousness type double patenting as being unpatentable over claims 1, 2, and 7-13 of U.S. Patent No. 6,613,277 B1. Claims 1-8 and 12 are also rejected under the judicially created doctrine of obviousness type



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double patenting as being unpatentable over claims 1, 5, 9-13, 16 and 19 of U.S. Patent No. 5,601,786 in view of Disanayaka et al.

Applicant encloses a terminal disclaimer to U.S. Patent No. 6,613,277 to Monagan, thereby overcoming the obviousness type double patenting rejection in view of the '277 Patent.

With respect to the obviousness type double patenting rejection over U.S. Patent No. 5,601,786 to Monagan in view of Disanayaka et al., Applicant submits that the cited references fail to disclose the claimed invention. Nowhere does Monagan '786 teach or disclose the use of a titanium element and Disanayaka et al. fail to remedy this defect. As discussed above, Disanayaka et al. disclose titanium coatings rather than the claimed titanium element constructed from titanium or titanium alloys. Accordingly, Applicant respectfully requests withdrawal of the double patenting rejection of Monagan '786 in view of Disanayaka et al.

Conclusion

In view of the above, each of the presently pending claims in this application is believed to be in immediate condition for allowance. Accordingly, the Examiner is respectfully requested to pass this application to issue.

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Respectfully submitted,

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